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10/516,645

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Lars Rene Christian Waumans

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

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EXAMINER

SANEI, HANA ASMAT

ART UNIT

PAPER NUMBER

2879

MAIL DATE

DELIVERY MODE

10/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/516,645

Applicant(s)

WAUMANS ET AL.

Examiner

Hana A. Sanei

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 14-16, 21 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17, 18 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/8/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Claims 14-16, 21-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected distinction of R_{sr} and P_{Hg}, there being no allowable generic or linking claim.

Claims 1-25 are pending in the instant application.

Applicant's species election with traverse of Species II, including claim(s) 19-20 in Application No. 10/516645, filed on 7/18/07 is acknowledged.

A serious burden exists on the examiner because the applications contains claimed inventions that are not considered clearly unpatentable over each other. There is no direct disclosed relationship between the species.

The requirement is still deemed proper and is therefore made FINAL.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

Claim 11 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 8 and 13. See MPEP § 608.01(n). Accordingly, the claims 8, 13 not been further treated on the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 9-13, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baaten et al (US 5216323) in view of Nakai (US 4625152 A).

Regarding Claim 1, Baaten teaches a light-transmitting discharge vessel (see at least Figs. 1-3); the discharge vessel (1, "discharge vessel") enclosing, in a gastight manner (Col. 2, lines 59-60), a discharge space provided with an inert gas mixture and with mercury (Ar, mercury, Col. 2, lines 60-61), a first portion (first side of circular circumference of 1) of the discharge vessel being provided with a first electrode (3) arranged in the discharge space and with a luminescent layer (5, "first luminescent layer"), which first portion, in operation, radiates light in a first range of the electromagnetic spectrum from 100 to 1000 nm ("generates mainly UVA emission and in addition some UVB emission," Col. 3, lines 5-7), a second portion (second side of circular circumference of 1, the second side being at 180° from the first side) the discharge vessel being provided with a second electrode (2) arranged in the discharge space, which second portion, in operation, radiates light in a second range (6, "second luminescent layer") of the electromagnetic spectrum from 100 to 1000 nm ("mainly UVA emission and in addition some UVB emission," Col. 3, lines 9-10), said second range being different from the first range ("the quantity of emitted UVB energy as a percentage of the quantity of UVA radiation emitted by the first luminescent material, **differs** from that of the second luminescent material," Col. 3, lines 14-17, [directions A, B]), that

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wherein: the low-pressure mercury vapor discharge lamp (1) comprises current supply conductors (adjacent to 2, 3, refer now to Fig. 1a), and the discharge space contains only two electrodes (2, 3). Baaten is *silent* regarding the type of current received.

In the same field of endeavor, Nakai teaches a low-pressure mercury lamp (see at least Fig. 3) receiving a direct current ("DC power source," Col. 5, lines 4-6) in order to ensure that the luminance brightness for the tubular envelops can be adjusted to provide an optimum illumination level (Col. 3, lines 9-12).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the current application, as disclosed by Nakai, in the lamp of Baaten in order to ensure that the luminance brightness for the tubular envelops can be adjusted to provide an optimum illumination level.

Regarding Claim 9, Baaten teaches a wall of the second portion (second side of circular circumference of 1, the second side being at 180° from the first side) of the discharge vessel is made from a glass ("tubular glass discharge vessel 1," Col. 2, lines 58-59) which is transmissive to UV (Col. 3, lines 5-10).

Regarding Claim 10, Baaten teaches the luminescent (5) yields a spectral characteristic stimulating melatonin built-up in a human subject or yields a spectral characteristic suppressing the melatonin built-up or stimulating melatonin degradation in the human subject ("both UVA radiation (315-400 nm) and UVB radiation (280-315 nm) play an important part in the pigmentation process in the human skin," Col. 1, lines 36-38).

Regarding Claim 11, Baaten teaches the second portion (second side of circular circumference of 1, the second side being at 180° from the first side) of the discharge vessel is provided with a further luminescent (6, "second luminescent layer").

Regarding Claim 12, Baaten teaches the further luminescent layer (6) yields a spectral characteristic suppressing the melatonin built-up in a human subject or stimulating melatonin degradation or yields a spectral characteristic stimulating melatonin built-up in the human subject ("mainly UVA emission and in addition some UVB emission," Col. 3, lines 9-10).

Regarding Claim 13, Baaten teaches the luminescent layer (6) yields a spectral characteristic stimulating melatonin built-up in the human subject and that the further luminescent layer yields a spectral characteristic suppressing the melatonin built-up or stimulating melatonin degradation in the human subject ("mainly UVA emission and in addition some UVB emission," Col. 3, lines 9-10; See also Col. 1, lines 36-40).

Regarding Claim 17, Baaten teaches the luminescent layer (5) of the first portion comprises a luminescent material emitting UV-A radiation ("generates mainly UVA emission and in addition some UVB emission," Col. 3, lines 5-7), and in that the further luminescent layer (6) of the second portion comprises a luminescent material emitting UV-B radiation or emitting UV-A and UV-B radiation ("mainly UVA emission and in addition some UVB emission," Col. 3, lines 9-10).

2. Claims 1, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer (EP 0806792 A2) of prior record in view of Nakai (US 4625152 A).

Regarding Claim 1, Meyer teaches a light-transmitting discharge vessel (2, see at least Fig. 1, "glass, quartz, or such," Par. 3 of English Translation generated by EPO database), the discharge vessel enclosing, in a gastight manner ("vacuum-tightly closed," Par. 1), a discharge space provided with a gas mixture and with mercury (Hg line, Par. 21 and "gas discharge lamp," Par. 23), a first portion (7) of the discharge vessel being provided with a first electrode ("two electrodes," Par. 1) arranged in the discharge space and with a luminescent layer (5, phosphor), which first portion, in operation, radiates light in a first range of the electromagnetic spectrum from 100 to 1000 nm (Par. 2, "e.g. UV, red, green, blue"), a second portion (8) of the discharge vessel being provided with a second electrode (Par. 1) arranged in the discharge space, which second portion, in operation, radiates light in a second range (6, phosphor) of the electromagnetic spectrum from 100 to 1000 nm (Par. 2, "e.g. UV, red, green, blue"), said second range being different from the first range (*"at least one of the container parts of 7, 8 is according to invention before the production of the connection by means of the connecting pipe 8 with one opposite the phosphor 6 and/or. the phosphor mixture in the other container part of 8 different phosphor 5 coated with different spectral characteristics,"* Par. 14), that wherein: the low-pressure mercury vapor discharge lamp (1, "low pressure gas-discharge lamps," Par. 23) comprises current supply conductors (adjacent to electrodes, Fig. 1) for receiving a current, and the discharge space contains only two electrodes (Fig. 1). Meyer is *silent* regarding the type of current received and the type of gas.

In the same field of endeavor, Nakai teaches a low-pressure mercury lamp (see at least Fig. 3) comprised of mercury and inert gas ("inert gas and mercury vapor," Col. 2, lines 29-31) receiving a direct current ("DC power source," Col. 5, lines 4-6) in order to ensure that the luminance brightness for the tubular envelopes can be adjusted to provide an optimum illumination level (Col. 3, lines 9-12).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the current application, as disclosed by Nakai, in the lamp of Meyer-De Putter in order to ensure that the luminance brightness for the tubular envelopes can be adjusted to provide an optimum illumination level.

Regarding Claim 24, Meyer teaches that a lamp housing (lines crossing tubes 7,8, Fig. 1) is attached to the discharge vessel of the low-pressure mercury-vapor discharge lamp, which lamp housing is provided with a lamp cap (lower most portion of 1).

Regarding Claim 25, Meyer teaches that the lamp is surrounded by a diffusely scattering light-transmitting envelope (container, not shown, Par. 2) which is attached to the lamp housing.

3. Claims 2-8, are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer (EP 0806792 A2) of prior record in view of Nakai (US 4625152 A) in further view of De Putter et al (WO 01/15201 A1).

Regarding Claim 2, Meyer-Nakai teaches the invention set forth above (see rejection in Claim 1 above). Meyer-Nakai fail to teach the use of amalgam.

In the same field of endeavor, De Putter teaches low pressure mercury lamp (see at least Fig. 1) wherein an amalgam (27, "auxiliary amalgam," Pg. 5, lines 28-30) is provided in the discharge vessel in order to provide a lamp having a relatively short run-up time behavior due to more mercury being loosened relatively more rapidly when an auxiliary amalgam is utilized during the starting of a discharge lamp (Pg. 2, lines 25-33).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to add the amalgam, as disclosed by De Putter, in the lamp of Meyer-Nakai in order to provide a lamp having a relatively short run-up time behavior due to more mercury being loosened relatively more rapidly when an auxiliary amalgam is utilized during the starting of a discharge lamp.

Regarding Claim 3, Meyer-Nakai-De Putter teaches that the amalgam (27, of De Putter) is provided in the region between the first and the second portion of the discharge vessel (refer to Fig. 1 & Fig. 2). Motivation to combine is the same as stated above in the rejection of Claim 1.

Regarding Claim 4, Meyer-Nakai-De Putter teaches that the amalgam (27, of De Putter) is provided in the region of the electrode of the portion of the discharge vessel with the lowest color temperature (Fig. 2). Motivation to combine is the same as stated above in the rejection of Claim 1.

Regarding Claim 5, Meyer-Nakai-De Putter teaches that the amalgam (27, of De Putter) is provided in the region of the first electrode, and a further amalgam is provided in the region of the second electrode (25, 25'). Motivation to combine is the same as stated above in the rejection of Claim 1.

Regarding Claim 6, Meyer-Nakai-De Putter teaches that a cold spot (15, of De Putter) is provided in the discharge vessel. Motivation to combine is the same as stated above in the rejection of Claim 1.

Regarding Claim 7, Meyer-Nakai-De Putter teaches that the cold spot (15, of De Putter) is provided in the region between the first and the second portion of the discharge vessel. Motivation to combine is the same as stated above in the rejection of Claim 1.

Regarding Claim 8, Meyer-Nakai-De Putter teaches that the amalgam (27, of De Putter) is provided in the region of the cold spot (27 is also a relatively cold spot). Motivation to combine is the same as stated above in the rejection of Claim 1.

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baaten et al (US 5216323) in view of Nakai (US 4625152 A) in further view of Jennato et al (US 5666031 A).

Regarding Claim 18, Baaten-Nakai teaches the invention set forth above (see rejection in Claim 1 above). Baaten-Nakai fails to teach an alternating current.

In the same field of endeavor of low pressure lamps, Jennado teaches that the current is received as either direct or alternating (Col. 4, lines 60-63), thus exemplifying recognized equivalent current applications of the lamp in the art. Jennado teaches the suitability of using a low pressure lamp being provided as a DC or an AC power supply in order to ensure proper current pulses generated during application of the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the current receiver of Baaten-Nakai as

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alternating instead of as direct, since the selection of any of these known equivalents would be considered within the level of ordinary skill in the art as evidenced by Jennato's teaching.

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer (EP 0806792 A2) of prior record in view of Nakai (US 4625152 A) in further view of Miyazaki et al (US 5773937 A).

Regarding Claim 23, Meyer-Nakai teaches the invention set forth above (see rejection in Claim 1 above). Meyer-Nakai is silent amount of mercury.

In the same field of endeavor, Miyazaki teaches a low pressure mercury lamp ("low vapor pressure of the filler of the discharge lamp," Col. 6, lines 47-49) having less than 0.2 mg mercury (Col. 25, lines 45-49) in order to provide a discharge lamp which has a cheap and simple structure (Col. 5, lines 21-24).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to add the amount of mercury, as disclosed by Miyazaki, in the lamp of Meyer-Nakai in order to provide a discharge lamp which has a cheap and simple structure.

Allowable Subject Matter

A. Claims 19-20 are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art of record teaches a low-pressure mercury vapor discharge lamp comprising a light-transmitting discharge vessel, the discharge vessel enclosing, in a gastight manner, a discharge space provided with an inert gas mixture and with mercury, a first portion of the discharge vessel being provided with a first electrode arranged in the discharge space and with a luminescent layer, which first portion, in operation, radiates light in a first range of the electromagnetic spectrum from 100 to 1000 nm, a second portion of the discharge vessel being provided with a second electrode arranged in the discharge space, which second portion, in operation, radiates light in a second range of the electromagnetic spectrum from 100 to 1000 nm, said second range being different from the first range, that wherein: the low-pressure mercury vapor discharge lamp comprises current supply conductors for receiving a direct current, and the discharge space contains only two electrodes.

However, the prior art of record neither shows nor suggests a motivation for the discharge lamp comprises an at least partly substantially cylindrical discharge vessel with a length $L_{\text{sub.dv}}$ and with an internal diameter $D_{\text{sub.in}}$, and the ratio of the weight of mercury $m_{\text{sub.Hg}}$ in the discharge vessel and the product of the internal diameter $D_{\text{sub.in}}$ and the length of the discharge vessel $L_{\text{sub.dv}}$ is given by the relation: $3 m_{\text{Hg}} D_{\text{in}} \cdot L_{\text{dv}} = C$, wherein $C \leq 0.01 \text{ } \mu\text{g/mm}^2$ as set forth in Claim 19.

Claim 20 is allowable because of their dependency status from claim 19.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

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US 5677598

US 5216323

US 5907216

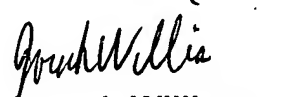
JP 61-049366

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hana A. Sanei whose telephone number is (571)-272-8654. The examiner can normally be reached on Monday- Friday, 9 am - 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hana A. Sanei
Examiner



Joseph Williams
Primary Examiner